

Innovation Hub
Testing Novel Technology in UK Airspace
Advice for Innovators

Overview

The purpose of this guide is to provide an introduction to the fundamentals of airspace, and to the processes for requesting your own airspace for innovation.

Airspace in the UK is comprised of a number of airspace structures as described on [page 3](#). Within each structure certain rules apply, including rules that control how aircraft access and operate in the airspace.

There are lots of different stakeholders that interact with the structures of UK airspace. Sometimes it is necessary to test a new design or procedure. This can be delivered through an Airspace Trial, which is introduced on [page 4](#).

Testing innovations in protected or representative environments is critical for gathering evidence to support development. [Page 5](#) explains where you should start.

In the first instance, you should check whether existing airspace structures can be used, and [page 6](#) shows you how to find that information.

If the location, rules or restrictions of an existing airspace structure do not suit the requirements for testing, a new airspace structure may be needed. [Page 7](#) describes the overall approach to changing airspace design.

For the CAA to determine the best potential airspace options for your innovation activity, there is some important information that you must provide, as outlined on [page 8](#).

For you as an innovator, this process will consider whether an airspace structure could be introduced that suits your needs for tests and trials. [Page 9](#) gives some examples of possible outcomes of the Airspace Trial process.

There are a number of benefits and considerations to following this process, and these are outlined on [page 10](#).



Fundamentals of Airspace

Airspace in the UK is comprised of a number of airspace structures. Within each structure certain rules apply, including rules that control how aircraft access and operate in the airspace.

The UK's airspace has been designed and redesigned over a number of decades to meet various operational needs, such as increases in aircraft traffic, aircraft performance and changes in environmental legislation.

Airspace structures are set up as either **permanent** or **temporary**. A permanent structure has no expiry date, whereas a temporary structure does. In both cases, an airspace structure is **active** during times when the rules apply.

The International Civil Aviation Organization (ICAO) sets out 7 different classifications of airspace, each with their own predefined rules.

These are labelled as A to G, and are either **controlled** or **uncontrolled**. Class A to E is controlled, and Class G is uncontrolled. In the UK, classes B and F are not currently applied.

Types of Airspace

As well as its classification, airspace is also defined by its type depending on where it is and the function it provides.



Control Zones – a Controlled Airspace extending upwards from the surface of the earth to a specified upper limit



Control Areas – these are above control zones and offer protection for aircraft entering and leaving aerodromes like Heathrow and Gatwick.



Airways – the “motorways of the sky”, providing connections between control areas and across national boundaries.



Prohibited, Restricted and Danger Areas – it is also necessary to warn or restrict aircraft from certain areas for safety reasons.

Temporary Danger Areas (TDA)

The TDA is a type of temporary airspace. Temporary airspace arrangements will usually apply for a period of no longer than 90 days.

Introduction to Airspace Trials

There are many different stakeholders that interact with the structures of UK airspace. Sometimes it is necessary to test a new design or procedure. This can be delivered through an Airspace Trial.

The requests for a trial should be in accordance with the trial procedure as published in CAA publication [CAP1616 'Airspace Change'](#). The audience of this policy and guidance document includes aerodromes, air navigation service providers, aircraft operators and many more.

The CAP1616 document guides you through the process of conducting an airspace change, and should be read in conjunction with relevant policy and legislation. This Innovation Hub document has been created to provide additional clarity for you as an Innovator.



Airspace Trial Definition

A trial of airspace design for the purposes of investigating the feasibility of, or validating proposals for, innovative airspace design, technology or air traffic control operational procedures.

– Civil Aviation Authority (Air Navigation) Directions 2017

Examples of an Airspace Trial



Evaluating **procedural changes**, such as aircraft approach paths into aerodromes



Changes to the **geometry** of an existing airspace structure



Evaluating changes to **date or time** conditions on aircraft movements



Testing **novel technology**, systems, or aircraft types, or evaluating new test sites.

This document is primarily targeted at Innovators who are looking to conduct technology testing that would require segregated airspace. This usually includes unmanned aircraft systems, but may extend to other applications.